

Figure 1

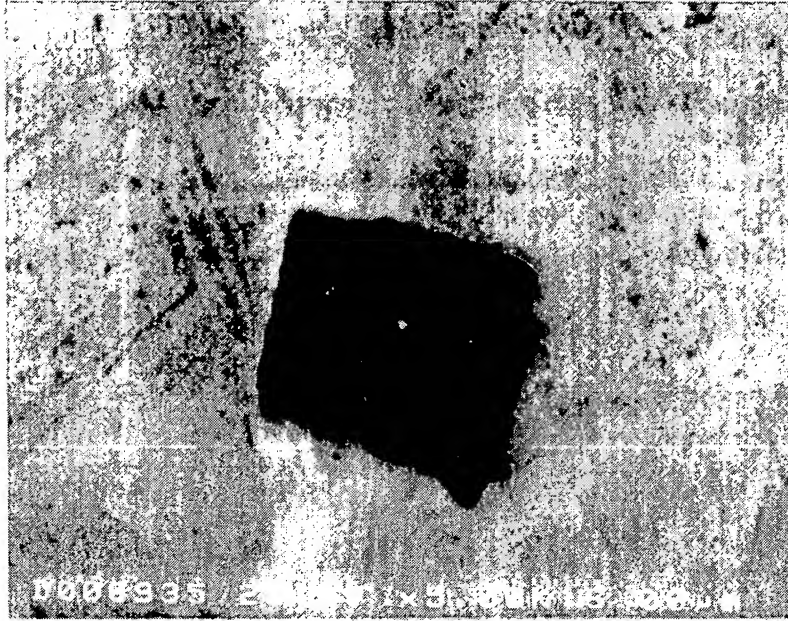


Figure 2

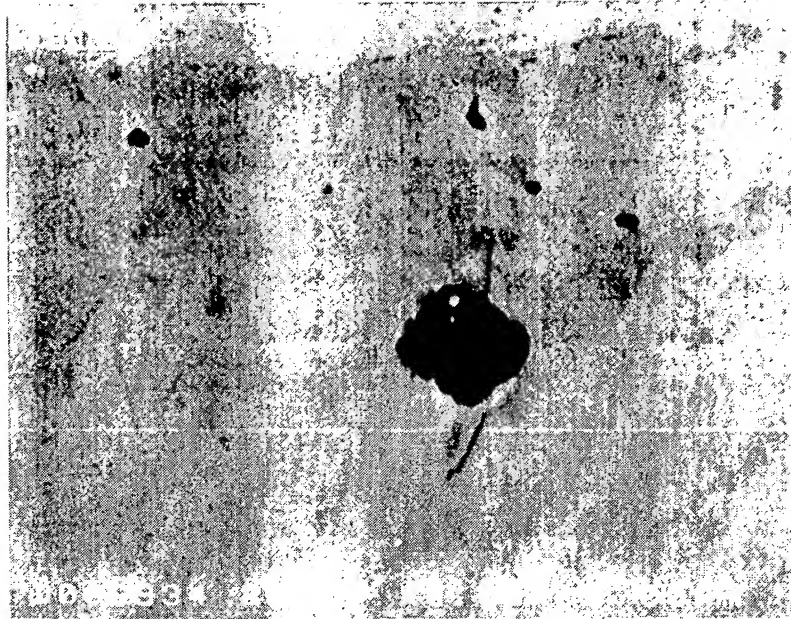


Figure 3

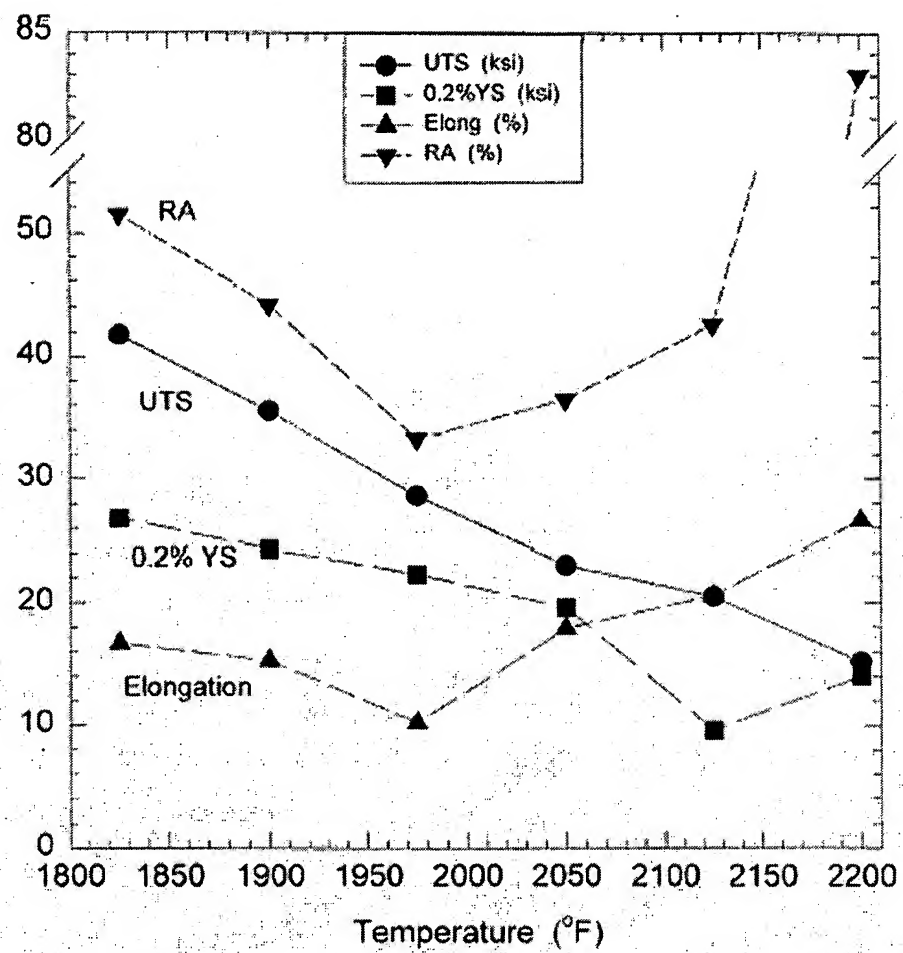


Figure 4

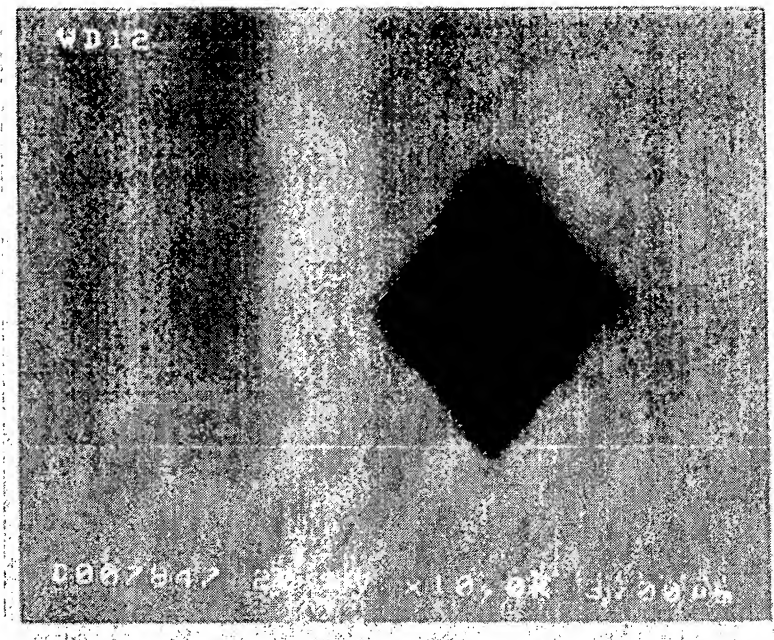


Figure 5



Figure 6



Figure 7

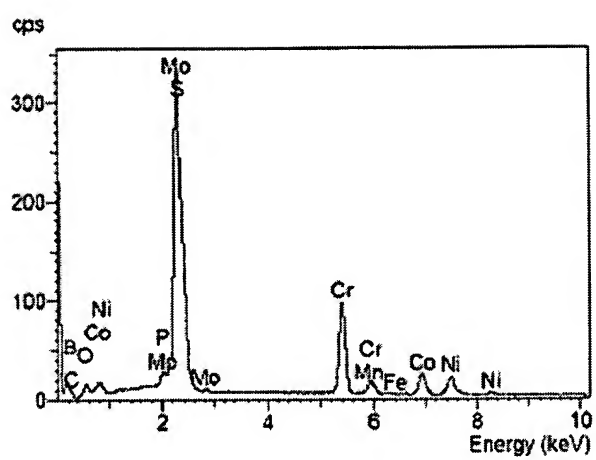


Figure 8



Figure 9

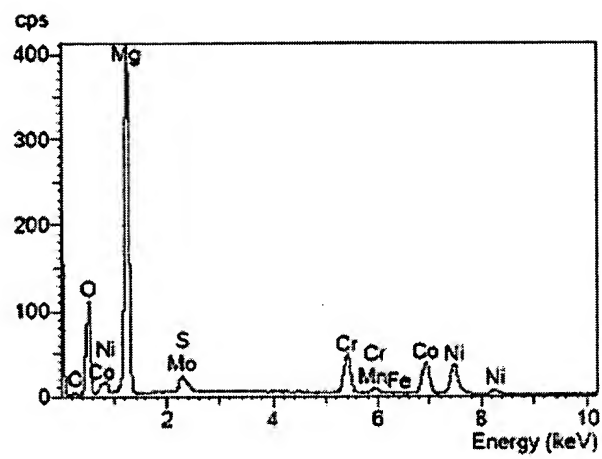


Figure 10

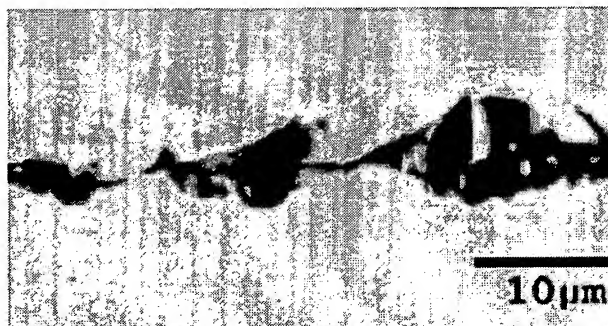


Figure 11

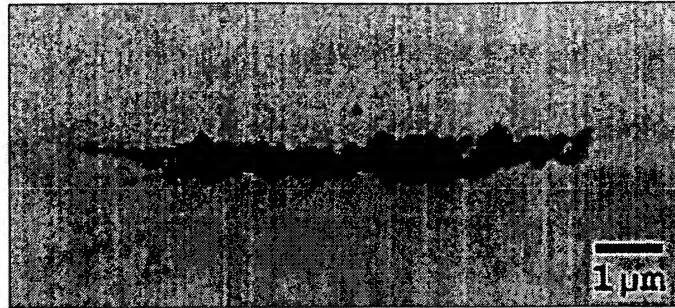


Figure 12

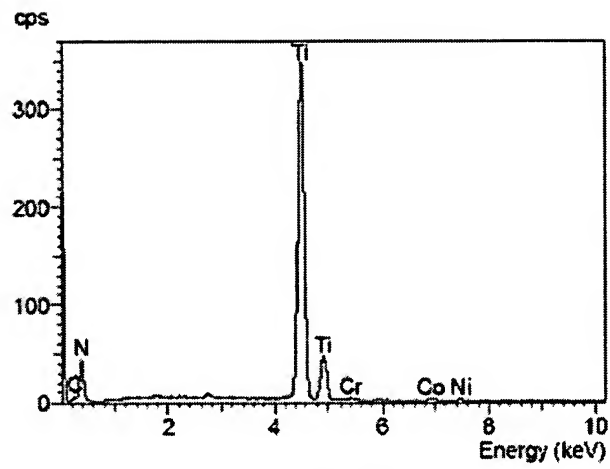


Figure 13

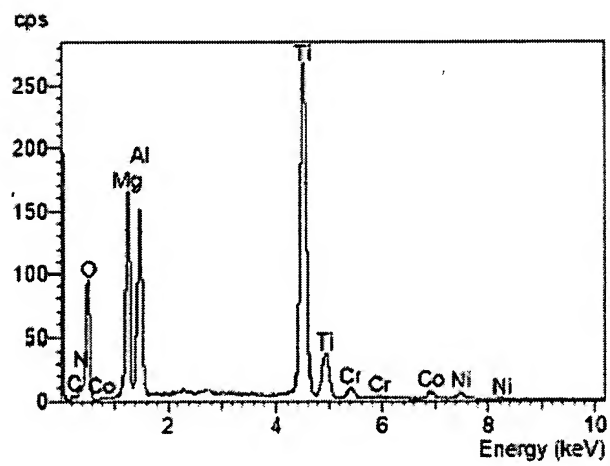


Figure 14

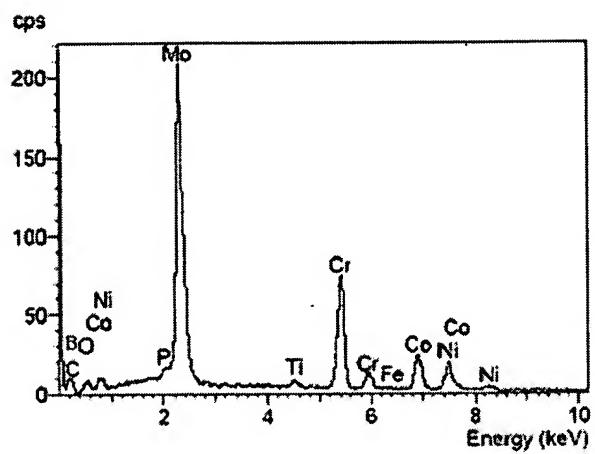


Figure 15

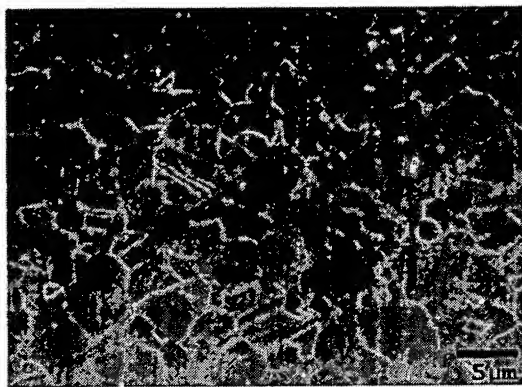


Figure 16

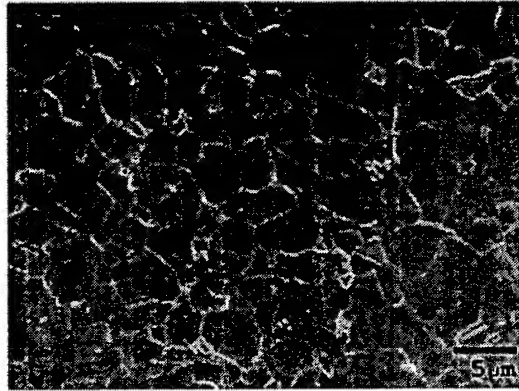


Figure 17

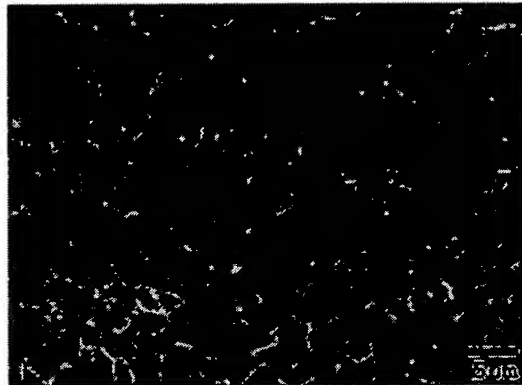


Figure 18

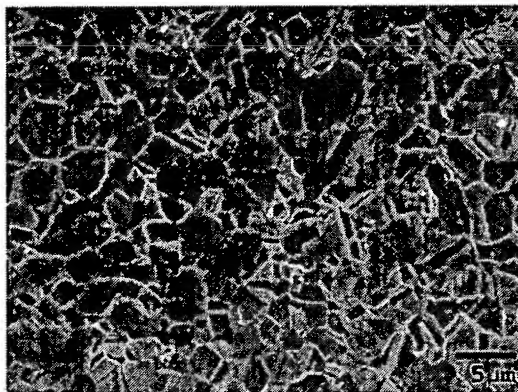


Figure 19

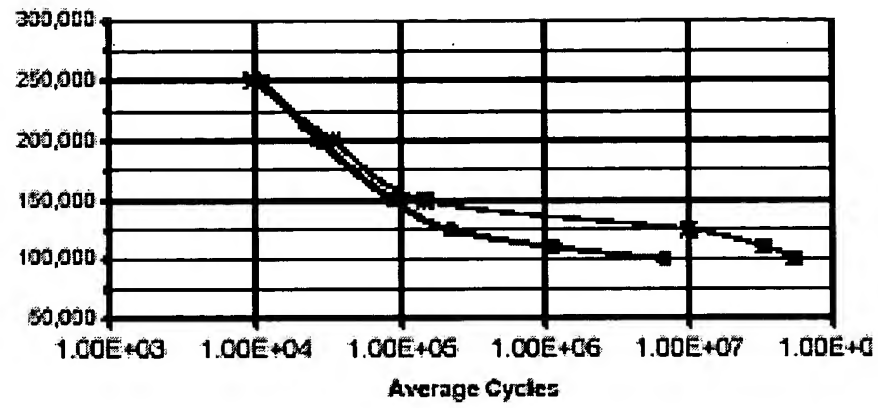


Figure 20

Heat WF64 - LLA Mg Deoxidation

Size	Composition
0.5 μm	Mg oxide
0.5 x 1.2 μm	Mg oxide
0.8 μm	Mg oxide
0.6 μm	Mg oxide
11 x 0.8 μm	Mg oxide
12 x 0.8 μm	Mg/Al oxide
1 μm	Mg oxide
1.6 μm	Mg oxide
1.2 μm	Mg oxide
1.6 μm	Mg oxide
0.8 μm	Al oxide
1 μm	Mg oxide
9 x 0.6 μm	Al/Si oxide

ASTM E45 - Method D (worst Field)

Globular Type D Thin = 0.5
All others = 0

Grain Size - ASTM 10

Heat WF66 - LLA Ce Deoxidation

Size	Composition
2.4 x 0.9 μm	Ce oxide
2.2 μm	Ce oxide
1 μm	Ce oxide
1 μm	Ce oxide
1 μm	Ce oxide
1.5 μm	Ce oxide
4 x 2 μm	Ce oxide
1.6 μm	Ce oxide
3.2 μm	Ce oxide
15 x 2 μm	Ce oxide
0.7 μm	Ce oxide
5.4 x 2.4 μm	Ce oxide
4.3 x 0.4 μm	Ce oxide

ASTM E45 - Method D (worst Field)

Globular Type D Thin = 1.0
All others = 0

Grain Size - ASTM 10

Heat WF65 - LLA Ca Deoxidation

Size	Composition
0.8 μm	Al oxide
0.8 μm	Al oxide
1.8 μm	Al oxide
2 μm	Al oxide
1.7 μm	Al oxide
1.5 μm	Al oxide
2 μm	Al oxide
1.2 μm	Al oxide
1 μm	Al oxide
1.2 μm	Ca oxide
12 x 1 μm	Al oxide
90 μm	Al/Ca oxide
stringer = total length of 90 μm	

ASTM E45 - Method D (worst Field)

Globular Type D Thin = 0.5
Sulfide Type A Thin = 0.5
All others = 0

Grain Size - ASTM 10

Figure 20